



Correlates of depressive symptoms among North Korean refugees adapting to South Korean society: The moderating role of perceived discrimination

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ABSTRACT

Although the prevalence of depressive disorders among North Korean (NK) refugees living in South Korea has been reported to be twice the rate of their South Korean counterparts, little is known about the correlates of depressive symptoms among this population. Despite their escape from a politically and economically repressive setting, NK refugees continue to face multidimensional hardships during their adaptation process in South Korea, which can adversely affect their mental health. However, to our knowledge, no empirical research exists to date on depressive symptoms in the context of adaptation or perceived discrimination among NK refugees. To fill this gap, this study used a sample of 261 NK refugees in South Korea from the 2010 National Survey on Family Violence to examine associations between sociocultural adaptation, perceived discrimination, and depressive symptoms, as well as the moderation effect of discrimination on adaptation to depressive symptoms. We found that poor sociocultural adaptation and perception of discrimination were associated with increased levels of depressive symptoms. Perception of discrimination attenuated the association between better adaptation and fewer depressive symptoms, when compared to no perception of discrimination. These findings highlight the need to improve NK refugees' adaptation and integration as well as their psychological well-being in a culturally sensitive and comprehensive manner. They also underscore the importance of educating South Koreans to become accepting hosts who value diversity, yet in a homogeneous society.

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1. Introduction

Refugee admission, protection, and resettlement have been a moral obligation in many countries (Beiser and Hou, 2001). Helping refugees successfully resettle can be an early investment making them become contributing members of their host countries in the long term (Beiser, 2009; Beiser and Hou, 2001). However, refugees are at risk of poor mental health, which can be a significant loss in human capital and economic productivity (Beiser, 2009). As a consequence of forced migration and traumatic events experienced before resettlement (Fazel et al., 2005), refugees exhibit higher rates of mental illness than those exhibited by the general

population (Porter and Haslam, 2005). In addition, a number of studies have shown that enduring stressful experiences, such as adjusting to life in a different culture, loss of social support, unemployment, living in poverty, discrimination, and marginalization, after resettlement adversely affect the mental health of refugees (Beiser and Hou, 2006; Kirmayer et al., 2011; Marshall et al., 2005; Noh et al., 1999; Porter and Haslam, 2005; Watters, 2001). These post-migration factors can be addressed through interventions upon resettlement (Murray et al., 2010).

Despite their escape from a politically and economically repressive setting, North Korean (NK) refugees living in South Korea are not exempt from additional challenges after their resettlement. Empirical studies and reviews have documented that NK refugees experience poor mental health (Chung and Seo, 2007; B. Jeon et al., 2009; W. Jeon et al., 2005; H. H. Kim et al., 2011; Min, 2008), unemployment (Bidet, 2009; J. U. Kim and Jang, 2007; Lankov, 2006), discrimination (J. U. Kim and Jang, 2007; S. Y. Kim, 2010) and social

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exclusion (S. Y. Kim, 2010; Park et al., 2009; Suh, 2002) in South Korea, in addition to trauma experienced before entering the new society. In the case of depressive disorders, the prevalence among NK refugees has been reported to be twice the rate of their South Korean counterparts (H. H. Kim et al., 2011). However, to our knowledge, no empirical research exists to date on depressive symptoms in the context of adaptation or perceived discrimination among this population. Thus, in response to this research gap, this study aimed to explore whether sociocultural adaptation and perceived discrimination are associated with depressive symptoms among NK refugees who live in South Korea and whether the association between sociocultural adaptation and depressive symptoms among NK refugees is moderated by perceived discrimination. To provide some context to this exploration, we provide some background to the NK refugee experience below.

1.1. Background

In the mid-1990s, a severe food crisis precipitated by natural disasters spurred a large-scale exodus of North Koreans searching for food and freedom in neighboring China despite the dangerous journey (E. Kim et al., 2009; S. Y. Kim, 2010; Ko et al., 2004; Lankov, 2006; Min, 2008). Although the United Nations High Commissioner for Refugees (UNHCR) generally considers North Koreans in China as 'persons of concern' who are pending refugee status determination procedures (UNHCR, 2004), China views them as illegal migrants in search of economic resources (D. S. Kim, Cho and Moon, 2007; Ko et al., 2004). China has maintained a historically close relationship with North Korea and signed the Agreement on Repatriation of Border Crossers with North Korea in 1987 (D. S. Kim et al., 2007). When repatriated, NK refugees are interrogated, tortured, imprisoned in concentration camps, or executed in public because leaving North Korea without governmental permission is considered a political crime (H. Lee and Gerber, 2009). In addition, if a NK refugee's escape is discovered by North Korean officials, family members of the refugee who remained in North Korea are also in great danger (W. Jeon et al., 2005; Ko et al., 2004). This makes them vulnerable to various human rights violations (E. Kim et al., 2009; Ko et al., 2004). E. Kim et al. (2009) reported that approximately 80%–90% of NK refugee women are victims of trafficking and sexual exploitation in China. The number of those residing in China and other countries has been estimated to be between 30,000 and 300,000 (E. Kim et al., 2009; Ko et al., 2004; Lankov, 2006; Park et al., 2009), whereas the number of NK refugees who have successfully entered South Korea exceeded 27,000 as of October 2014 (Ministry of Unification, 2014).

Upon successful arrival in South Korea, NK refugees are granted citizenship in addition to various types of settlement support from the government (J. U. Kim and Jang, 2007; Min, 2008), usually in the form of generous monetary compensation (Chung and Seo, 2007; Lankov, 2006; Suh, 2002). However, such support and resources do not include sufficient emphasis on mental health treatment (Chung and Seo, 2007), nor are they comprehensive enough to promote NK refugees' overall well-being (S. Y. Kim, 2010; Park et al., 2009; Suh, 2002). Specifically, research has indicated high prevalence rates (30%–50%) of depressive disorders among NK refugees (Eom and Lee, 2004; B. Jeon et al., 2009) as well as a significant increase in depressive symptoms associated with years lived in South Korea (Y. Cho et al., 2005). Some scholars have attributed depression among NK refugees to loneliness from being socially excluded, profound guilt about leaving their families behind in North Korea, and pressure to survive in a competitive capitalistic society (B. Jeon et al., 2009; Min, 2008).

South Korea is an ethnically homogenous nation that has a short history of immigration and aversion to multiculturalism (Bidet,

2009; W. Jeon, 2000). Hence, despite the fact that North and South Koreans share the same original ethnicity and racial identity (Park et al., 2009), reports have revealed that South Korean civilians are generally discriminatory toward or show contempt for NK refugees (J. U. Kim and Jang, 2007; S. Y. Kim, 2010). J. U. Kim and Jang (2007) stated that almost half of South Korean respondents in a national poll expressed apathetic attitudes toward NK refugees. Despite the South Korean government's emphasis on support of vocational training and assistance for NK refugees, the majority of refugees who gain employment quit their jobs within a year (B. Jeon et al., 2009) and experience prejudice and discrimination by South Koreans in the workplace (J. U. Kim and Jang, 2007; S. Y. Kim, 2010; Lankov, 2006; Min, 2008). As a consequence, NK refugees tend to conceal their country of origin due to fear of experiencing discrimination by their South Korean counterparts (Min, 2008). Moreover, the majority of NK refugees face language barriers that cause difficulties in their daily life (J. U. Kim and Jang, 2007; Min, 2008); some have expressed that they are unable to comprehend the South Korean language (Lankov, 2006). Although both countries use the same language, more than 60 years of separation has created a wide linguistic gap (D. S. Kim et al., 2007; Park et al., 2009) in dialects, word meanings, and expressions (Lankov, 2006). NK refugees are easily identified by South Koreans by their dialect during verbal exchanges. Furthermore, NK refugees have reported experiencing significant difficulty managing their finances in the capitalistic South Korean society (Chung and Seo, 2007), particularly because they are not sufficiently trained about the concept of money or how to manage it appropriately. Some NK refugees express ambivalence toward money due to its portrayal in North Korea as a symbol of selfishness and evil in capitalism (W. Jeon, 2000). Thus, the struggles that NK refugees face after resettling in their new environment are multifaceted and require comprehensive examination to inform efforts to improve their psychosocial well-being.

2. Sociocultural adaptation, perceived discrimination, and depressive symptoms

The sample of this study consisted of ever-married refugee adults who came from North Korea, a nation with fairly different ideologies and values than their host country. Level of adaptation to a new social and cultural environment has been found to be a determinant of mental illness, particularly depression and post-traumatic stress disorder, among refugee populations (Beiser, 2009; Beiser and Hou, 2006; Kirmayer et al., 2011). Significant distress can be experienced during the cultural change process through confusion of ethnic and religious identities, changes in gender roles, and intergenerational conflicts within the family, which can directly or indirectly affect the mental health of refugees (Kirmayer et al., 2011). NK refugees' process of adaptation to South Korea involves several other domains beyond language proficiency, such as understanding capitalism, liberal democracy, law, and attitudes and behaviors of South Koreans (Suh, 2002), due to the wide sociocultural gap between the two Korean nations. Thus, this study hypothesized that a high level of sociocultural adaptation to the host country would serve as a protective factor of psychological distress, hence will be negatively associated with depressive symptoms among NK refugees.

Unfair treatment such as perceived discrimination is strongly associated with depression in the general population; such associations are more significant among socially disadvantaged individuals in the United States (Kessler et al., 1999). The perception of unfair treatment can harm an individual's self-esteem and self-efficacy or hinder opportunities to be active in social and economic spheres, which may increase the risk of mental health

problems (Beiser, 2009). Similarly, studies of refugee populations have found perceived discrimination in the host country to be associated with elevated risk of mental illness (Beiser, 2009; Kirmayer et al., 2011; Noh et al., 1999). Pernice and Brook (1996) found that among various post-migration stressors, such as discrimination, social isolation, and unemployment, discrimination was the most critical factor associated with elevated levels of depression for Southeast Asian refugees in New Zealand. In a similar vein, the literature on NK refugees has often discussed the severity of discrimination by mainstream South Koreans towards NK refugees and its adverse effects on their psychosocial well-being (Bidet, 2009; W. Jeon, 2000; J. U. Kim and Jang, 2007; Lankov, 2006; Min, 2008; Park et al., 2009; Suh, 2002); however, there is little empirical evidence of its influence on the mental health status of NK refugees. Thus, it is hypothesized that perception of being discriminated against by South Koreans would be positively associated with depressive symptoms in our study sample.

Although study samples were immigrants, previous research has examined the independent effects of adaptation and discrimination on psychological distress, where discrimination exerted a robust and independent direct effect on mental health over and above adaptation levels (Finch et al., 2000; Nakash et al., 2012). In addition, some studies found that adaptation moderated the effect of perceived discrimination on poor mental health outcomes among immigrants (Finch et al., 2000; Noh and Kaspar, 2003; Torres et al., 2012). However, empirical evidence of perceived discrimination moderating the association between adaptation and psychological distress among refugees is lacking. The perception of how a refugee is treated by members of the host society plays an important role in the individual's process of adaptation, which has implications for mental health (Nakash et al., 2012). Immigrants in general and refugees in particular may be less willing and able to adapt to a society that does not want them. Also, stress occurring in the adaptation process can be relatively controllable by the adapting individual, whereas discrimination is an uncontrollable event that is due to one's ethnic or social position (Beiser and Hou, 2006; Torres et al., 2012). As such, the relationship between refugees' adaptation and psychological distress is likely to have a differential effect when refugees are discriminated against by host country counterparts, as compared to those who are not. Thus, this study hypothesized that perception of discrimination will moderate (i.e., mitigate or amplify) the strength of the association between adaptation and depressive symptoms.

Although the literature on NK refugees in general remains limited (B. Jeon et al., 2009), these refugees have become a population of emerging interest due to the relatively recent massive influx to South Korea since 2002 (Bidet, 2009). Thus, using a sample of NK refugees living in South Korea, this study aimed to examine associations between sociocultural adaptation, perceived discrimination, and depressive symptoms, as well as explore the potential moderation effect of discrimination on the association between sociocultural adaptation and depressive symptoms.

3. Methods

3.1. Sample and procedures

A sample of 304 NK refugees living in South Korea was recruited during a 3-month period (August to October, 2010) for the 2010 National Survey on Family Violence. This survey is administered to South Koreans by the Ministry of Gender Equality and Family (MOGEF, 2010) of South Korea once every 3 years, but a sample of NK refugees was included in the 2010 survey for the first time to examine domestic violence, mental health, and social issues in this population. To be eligible to participate, NK refugees had to be 19

years old or older and married, cohabiting with a partner, or divorced or separated within a year of the date of data collection. The analytic sample size of this study was 261 due to pairwise deletion.

According to MOGEF (2010), the nationally representative sample of South Koreans was collected based on the 2005 Census data. 200 districts were selected by stratified sampling and then 19 households were randomly selected among these districts, resulting in a total of 3,800 dwelling units. Researchers visited each dwelling unit and recruited only the adult (19 years and older) whose date of birth (excluding the year) was the earliest in the household. As a result, 3,269 ever-married adults and 531 never-married adults were recruited during August to October, 2010. In contrast, a snowball sampling technique was adopted for data collection of the NK refugee sample, in which NK refugee recruiters initially contacted some participants (i.e., seeds), who in turn introduced others to the researchers. When NK recruiters reached out to seed persons in metropolises nationwide, only those who lived in four metropolises (Seoul, Incheon, Gwangju, and Busan) agreed to participate. These seed persons introduced more individuals who resided within the same city to the recruiters. Hence, this sample includes NK refugees who were residing in four metropolises in South Korea and those who were willing to complete the survey. Despite potential recruitment bias, snowball sampling is known to be the most common and feasible sampling strategy to collect data from NK refugee respondents (H. Lee and Gerber, 2009) for two reasons. First, members of this population are difficult to reach because lists of information on NK refugees living in South Korea are strictly confidential for security purposes (S. Lee and Nam, 2014). Second, it is difficult to reach out to NK refugees or collect meaningful information from them due to a unique deep-rooted suspicion toward others that they developed in North Korea (W. Jeon, 2000; Min, 2008). Hence, they are generally reluctant to reveal their identity or experiences with South Koreans (Chung and Seo, 2007; W. Jeon et al., 2005) due to fear of security issues and the possibility of being placed under surveillance by the South Korean government (W. Jeon, 2000; Min, 2008). Thus, random sampling is inherently impractical for this population.

Trained NK refugee recruiters were involved in the data collection process not only for sampling reasons but also to ensure that the language used in the survey was culturally appropriate and to build trust with respondents during interviews. A researcher and an NK refugee recruiter visited each household (MOGEF, 2010). After the interviewers explained the purpose and content of the study, self-reported data were collected during face-to-face interviews with respondents who consented to participate. Each participant received a gift equivalent to 30,000 Korean won (approximately 30 U.S. dollars) as compensation for their participation. The Institutional Review Board at the University of Southern California approved data analysis of the deidentified data.

3.2. Measures

Sociodemographic data on age, gender, monthly household income, and duration in South Korea were measured based on participants' self-reports. As the number of women respondents almost doubled that of men, a dichotomous variable representing female gender was created for the analysis. Monthly household income of respondents was reported in seven categories (when converted 1,000 Korean won into 1 U.S. dollar): no income; more than \$0 but less than \$1,000; \$1,000 to \$1,999; \$2,000 to \$2,999; \$3,000 to \$3,999; \$4,000 to \$4,999; and \$5,000 and above. We dichotomized this variable to indicate low income (1 = under \$1,000; 0 = \$1,000 and above) because almost half (49.4%) of the participants' monthly household income was less than \$1,000 and

it has been used as a conventional cut-off point to indicate poverty among this population (B. Jeon et al., 2009; S. Y. Kim, 2010). Years lived in South Korea was calculated by subtracting the year and month of arrival from the date of data collection. These variables were controlled for in this study because previous studies have found that their effects on depression were significantly associated with depression among refugee populations (Beiser, 2009; Beiser and Hou, 2001; Marshall et al., 2005; Porter and Haslam, 2005).

Depressive symptomatology was assessed using the 20-item Center for Epidemiologic Studies Depression Scale (CES-D; Radloff, 1977). The Korean version of CES-D was used to measure the severity of depressive symptoms experienced during the previous week; this instrument has been shown to have high reliability and validity in the Korean language (M. Cho and Kim, 1993). Items were scored on a 4-point scale from 0 (*rarely*) to 3 (*most of the time*) and these items were summed to make a total score, with higher scores indicating more severe depressive symptoms. Cronbach's alpha of this scale in this study was 0.89.

The Sociocultural Adaptation to the South Korean Society Scale developed by Jang and Kim (2000) was used to measure NK refugees' social adaptation, cultural adaptation, interpersonal adaptation, and sense of belongingness in South Korea. To avoid using overlapping concepts of perceived discrimination, we omitted two items (i.e., "people are prejudiced against me" and "although people do not overtly say it, I feel discriminated by them") from the 10 original items for the analysis of this study. Retained eight items included "I cannot adjust/adapt to South Korean culture," "I have difficulty in understanding the unfamiliar language (e.g., Chinese characters or English-adopted words) used in South Korea," "I sometimes avoid contact with other people due to fears about them," and "I cannot feel a sense of belonging in South Korean society." Because items were rated on a 5-point Likert scale ranging from 1 (*almost never*) to 5 (*almost always*), scores were reverse coded so higher scores indicated better adaptation to South Korean society and a total score was calculated by summing the items. Cronbach's alpha of this scale in this study was 0.88.

Participants were asked whether or not they had experienced hardships while living in South Korea because of discriminatory and prejudicial attitudes of their South Korean counterparts. This single-item dichotomous variable was created based on self-reports.

Family functioning was assessed by the Family Adaptability and Cohesion Evaluation Scales-III (FACES-III; Olson et al., 1985), a 20-item questionnaire that measures family adaptability and cohesion. Family adaptability refers to the extent to which a family is flexible enough to change its roles and relationships in response to various situations, whereas cohesion is the degree of emotional closeness among family members (Olson et al., 1985). Items were scored on a 5-point Likert scale from 1 (*almost never*) to 5 (*almost always*) and these items were summed to make a total score, with higher scores indicating positive family adaptability and cohesion. Cronbach's alpha of this scale in this study was 0.90.

Physical health was measured based on participants' self-rated physical health during the previous week. This single-item variable featured response options ranging from 1 (*poor*) to 5 (*excellent*).

3.3. Statistical analyses

The analysis proceeded in two stages. First, a multivariable ordinary least squares regression was performed to assess whether sociocultural adaptation and perceived discrimination were independent correlates of depressive symptoms, while controlling for age, gender, income, years lived in South Korea, family functioning, and physical health status. The second stage involved examining

the moderation effect of perceived discrimination on the association between sociocultural adaptation and depressive symptoms, while controlling for all other variables in the first model. To reduce multicollinearity issues, all continuous independent and control variables (i.e., adaptation, family functioning, physical health, age, and years lived in South Korea) were centered to 0 by subtracting the mean of each variable (Aiken and West, 1991) and were entered into both multivariable regression models. All analyses were run in STATA 12.0 (StataCorp, College Station, TX).

4. Results

Sociodemographic and other characteristics of the study sample are provided in Table 1. Respondents were 41 years old on average and had lived in South Korea for an average of 5 years. Almost two thirds of the sample consisted of women (64.0%). Nearly half of participants reported having a monthly household income less than \$1,000 (49.4%), in which 15.7% reported to have no income. The mean score of sociocultural adaptation was 28.4 ($SD = 7.6$). Nearly half (43.3%) of the sample reported experiencing difficulties due to discriminatory attitudes of South Koreans. Family functioning score was 56.2 on average ($SD = 14.8$), and participants had an average self-rated physical health score of 2.4 ($SD = 1.0$). The mean depressive symptom score during the previous week was 22.5 ($SD = 10.5$), ranging from 1 to 55.

Table 2 presents the results of two multivariable regression models. The first model tested the associations between independent correlates and depressive symptoms, whereas the second examined the moderation effect of perceived discrimination on the association between sociocultural adaptation and depressive symptoms. Model 1 and Model 2 explained 42.5% and 43.6% of the variance in depressive symptoms in the study sample, respectively. In Model 1, sociocultural adaptation was negatively associated with depressive symptoms ($\beta = -0.49$, $p < .001$), indicating that NK refugees with higher levels of adaptation were less likely to experience depressive symptoms. In addition, the positive association between perceived discrimination and depressive symptoms among NK refugees ($\beta = 0.12$, $p < .05$) indicated that participants who reported being discriminated against by South Koreans had higher levels of depressive symptoms than those who did not. In addition, negative associations between depressive symptoms and family functioning ($\beta = -0.21$, $p < .001$) and physical health ($\beta = -0.22$, $p < .001$) indicated that respondents who reported positive family relationships and better physical health status were less likely to exhibit depressive symptoms.

Results of Model 2 in Table 2 relate to the moderation effect of

Table 1
Demographic characteristics of North Korean refugees in South Korea ($N = 261$).

	%	Mean ^a	SD	Range
Age		41.10	9.11	24–75
Female	63.98			
Monthly household income ^b				
Under \$1,000	49.43			
\$1,000–\$1,999	37.93			
\$2,000–\$2,999	11.11			
\$3,000–\$3,999	1.15			
\$4,000 and over	0.38			
Duration in South Korea		5.18	2.63	0.67–15.67
Sociocultural adaptation		28.35	7.56	11–40
Perceived discrimination	43.30			
Family functioning		56.15	14.77	20–99
Physical health		2.44	1.01	1–5
Depressive symptoms		22.52	10.52	1–55

^a Mean scores of continuous variables before being centered to 0.

^b Dichotomized to indicate low income (<\$1,000).

Table 2Multivariable regression of depressive symptoms during the previous week ($N = 261$).

Correlates	Model 1		Model 2	
	B (SE)	β	B (SE)	β
Age ^a	−0.03 (0.05)	−0.02	−0.03 (0.05)	−0.02
Female	0.59 (1.11)	0.03	0.42 (1.10)	0.02
Low income	1.16 (1.05)	0.06	1.31 (1.04)	0.06
Duration in South Korea ^a	−0.07 (0.18)	−0.02	−0.11 (0.18)	−0.03
Sociocultural adaptation ^a	−0.67 (0.07)	−0.49***	−0.81 (0.09)	−0.59***
Perceived discrimination	2.49 (1.03)	0.12*	2.72 (1.02)	0.13**
Family functioning ^a	−0.14 (0.03)	−0.21***	−0.14 (0.03)	−0.20***
Physical health ^a	−2.21 (0.52)	−0.22***	−2.15 (0.52)	−0.21***
Sociocultural adaptation × perceived discrimination	—	—	0.32 (0.13)	0.16*
Adjusted R ²	0.425***		0.436***	

* $p < .05$, ** $p < .01$, *** $p < .001$.^a Continuous variables centered to 0.

perceived discrimination. All correlates significantly associated with depressive symptoms (i.e., adaptation, perceived discrimination) as well as statistically significant control variables (i.e., family functioning, physical health) in Model 1 remained significant when the interaction term of perceived discrimination and sociocultural adaptation was added to Model 2. In addition, the interaction term showed a significantly positive association with depressive symptoms among NK refugees ($\beta = 0.16$, $p < .05$). This association is graphically depicted in Fig. 1, which shows that being discriminated against by South Koreans moderated the relationship between sociocultural adaptation and depressive symptoms. As adaptation levels increased, depressive symptoms decreased; however, this decrease was more gradual for respondents who perceived to be discriminated against compared to those who did not perceive discrimination.

5. Discussion

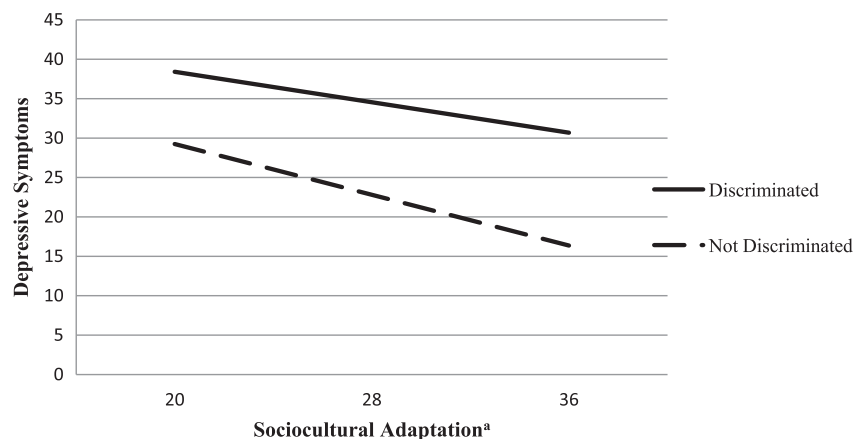
In this study, poor sociocultural adaptation and the perception of being discriminated against by South Koreans were associated with more depressive symptoms, and perceived discrimination moderated the association between sociocultural adaptation and depressive symptoms among NK refugees. Previous studies of NK refugees living in South Korea have reported significantly higher levels of depressive symptoms compared to their South Korean counterparts (H. H. Kim et al., 2011). A post hoc analysis of data

from the 2010 National Survey on Family Violence also found the level of depressive symptoms score among our NK refugee sample ($M = 22.5$, $SD = 10.5$) to be significantly higher ($t = -13.7$, $p < .001$) than that of ever-married South Korean adults ($M = 15.2$, $SD = 8.2$). However, to our knowledge, this study is the first to examine depressive symptoms in the context of sociocultural adaptation or perceived discrimination in this population. In addition, the findings of this study are consistent with other studies of refugee mental health, which increasingly have underscored the importance of post-migration factors that are amenable to intervention at the resettlement stage (Murray et al., 2010).

We found that sociocultural adaptation was the most significant correlate of depressive symptoms among NK refugees. Specifically, respondents who adapted better to South Korean society were likely to have lower levels of depressive symptoms than those with poor adaptation, while controlling for sociodemographic background, family functioning, and physical health status. This finding is consistent with previous studies on other refugee populations (Beiser, 2009; Beiser and Hou, 2006; Kirmayer et al., 2011). It is plausible that one's better understanding of the host culture might increase opportunities to participate in social activities with host country members (Beiser, 2009) and increase a sense of belongingness, which are significant predictors of better mental health (Park et al., 2009). It is also possible that NK refugees who reported higher levels of adaptation were able to seek professional help for mental health issues and access other services due to increased confidence about communicating with South Koreans and a reduced level of stigma concerning mental health (S. Cho et al., 2009).

Findings of this study indicated that South Koreans' discrimination was a significant correlate of depressive symptoms among NK refugees. Participants who perceived to experience discrimination were more likely to exhibit higher levels of depressive symptoms than those who did not, which is consistent with previous studies on other migrant populations (Finch et al., 2000; Noh et al., 1999; Pernice and Brook, 1996). Perceived discrimination might have damaged one's self-esteem, thereby elevating the level of depressive symptoms (Beiser, 2009). In addition, a sense of social exclusion and marginalization resulted from discrimination might have further prevented refugees, who are already at risk of poor mental health, from seeking mental health services that are generally provided by host country professionals (Grove and Zwi, 2006).

More importantly, this study contributed to the literature by finding that discrimination moderated the relationship between

**Fig. 1.** Moderation effect of perceived discrimination on the association between sociocultural adaptation and depressive symptoms among North Korean refugees.^aContinuous variables before being centered to 0. Range of sociocultural adaptation is from (mean-1SD) to (mean+1SD).

sociocultural adaptation and depressive symptoms. Specifically, experiencing discrimination attenuated the association between better adaptation and fewer depressive symptoms, when compared to not experiencing discrimination. It is possible that NK refugees who have higher levels of adaptation might have expected to experience less discrimination than those who have lower levels of adaptation due to their increased familiarity with the host culture and people, thus encountering a discriminatory situation might have served as a more negative effect on depressive symptoms among better-adapted refugees than it would among less-adapted individuals. A similar assumption was also stated in a previous study of Southeast Asian refugees living in Canada (Beiser and Hou, 2006).

Findings of this study highlight the importance of promoting practical adaptation of NK refugees to a new society that has fairly different social and cultural values and attitudes compared to their country of origin, rather than merely providing monetary benefits. In fact, the nonsignificant relationship between low income (i.e., living under the poverty line) and depressive symptoms when other conditions were controlled for indicates that income alone may not contribute to improving psychological well-being among NK refugees. To enhance NK refugees' sociocultural adaptation, we suggest that level of adaptation should be monitored on a regular basis and that interventions must be customized to meet each refugee's special needs (e.g., education on South Korean culture, language proficiency, mental health education, job training, etc.). In addition, screening of depressive disorders should be made at an early stage of resettlement, and long-term treatment should be provided to NK refugees who exhibit high levels of depressive symptoms. Moreover, consistent with previous research (Beiser, 2009; Kirmayer et al., 2011), this study found that positive family functioning and good physical health were associated with fewer depressive symptoms. Helping NK refugees overcome challenges, such as family conflicts and generation gaps that emerge while adapting to a new society (Chung and Seo, 2007), may serve as a particularly positive source of psychological well-being, because they come from a culture that highly emphasizes family bonds and solidarity (W. Jeon et al., 2005). Thus, a comprehensive approach of support that integrates public health and community services, including mental health and health education, accessible health care, family-based interventions, language assistance, and long-term education on concepts of capitalism, liberal democracy, and law, may assist the overall well-being of NK refugees.

These findings illuminate the need to develop policies and programs that can promote positive interactions between NK refugees and South Koreans. Previous literature on refugees has documented that interpersonal contact with mainstream members has alleviated the adverse effect of perceived discrimination on mental health outcomes (Beiser, 2009). In addition, educating South Koreans to value diversity and respect the experiences of NK refugees is necessary; it might be effective to include elements of multicultural education in regular school curriculum (Banks, 1993; H. J. Kim and Yoo, 2014) and in training sessions at workplaces that can ultimately benefit the broader society (Mor Barak, 2000). Furthermore, we suggest providing psychosocial treatment for NK refugees who were treated unfairly by South Koreans and interventions that can promote self-esteem, such as advocacy training (Watters, 2001). At the same time, it is critical to provide cultural competence training to public health practitioners and frontline workers who can promote a supportive environment in health care settings and provide culturally sensitive services to refugees (Grove and Zwi, 2006; Watters, 2001) and to other cultural minority groups.

Our findings must be interpreted with caution as this study was subject to four major limitations. First, its cross-sectional

design prevented us from drawing conclusions regarding causal linkages of sociocultural adaptation, discrimination and depressive symptoms. For instance, stigma related to mental health problems in South Korean society may be a contributor to poor sociocultural adaptation (S. Cho et al., 2009) rather than the reverse. Future studies would benefit from longitudinal data to confirm the causal influence of adaptation and perceived discrimination to depressive symptoms. Second, the sample may be biased and thus generalization may be limited due to the sampling strategy, i.e., snowball sampling rather than random sampling. As previously mentioned, random sampling is inherently difficult for this population; however, future studies could minimize recruitment bias by employing a respondent-driven sampling strategy. This strategy can provide more externally valid probability samples of such hard-to-reach populations than snowball sampling when the number of participants that seed persons can recruit is limited to a small number (e.g., three to four), while long chains of recruitment (e.g., six waves) are encouraged (Heckathorn, 1997). In this study, our ability to adjust for correlated errors in non-independent observations was limited by a lack of information on the specific location of each respondent or other information, which would suggest that observations are not independent. Third, as the primary focus of the original data (i.e., 2010 National Survey on Family Violence) of this study was on predictors of domestic violence, single and never married NK refugees were not included in the sample; this group may experience even higher levels of depressive symptoms due to the lack of a spouse or partner to provide social support. Lastly, the perceived discrimination variable was based on a single-item question that did not assess the frequency or intensity of discrimination. Although previous research has found that a single-item measure of perceived racial discrimination was a significant indicator of mental health and health outcomes among minority populations (Beiser and Hou, 2006; Lindström, 2008; Noh et al., 1999; Ornelas and Perreira, 2011; Yoo et al., 2009), future research may benefit from a standardized multiple-item variable to improve the validity of this construct.

6. Conclusion

Despite these limitations, findings of this study provide significant evidence that poor sociocultural adaptation and perception of discrimination in the host country were associated with more depressive symptoms among NK refugees, and that perceived discrimination moderated the association between adaptation and depressive symptoms. These findings are consistent with previous studies that indicated a sense of social inclusion gained through interpersonal relationships with South Koreans was positively associated with better mental and physical health outcomes and led to successful social and economic integration among refugees (Bidet, 2009; Park et al., 2009). Educating South Koreans to become accepting hosts is critical not only to the psychosocial well-being of NK refugees, but also to benefit the broader society in the long term. Particularly, the media can be an effective instrument to increase public awareness by portraying positive aspects and strengths of NK refugees, rather than highlighting their experiences of famine and trauma. This may allow the public to overcome prejudice and stereotypes related to NK refugees and promote more interpersonal contacts between South Koreans and NK refugees. It is essential to address the unique needs of these refugees to improve their adaptation and integration into the new society and their psychological well-being in a culturally sensitive and comprehensive manner.

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